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INFORMATION ANALYSIS OF THE ALBERTA  
CRIMINAL JUSTICE SYSTEM

by



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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Information Analysis of the Alberta Criminal Justice System" submitted by Georgia Ellen Monsma in partial fulfilment of the requirements for the degree of Master of Arts.

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## ABSTRACT

This study of criminal justice procedures in Alberta is undertaken with the view of providing a preliminary design for an integrated statistical system. As the basis for such a design, relationships between criminal justice agencies are analyzed from the perspective of systems theory. Descriptions are provided of the movement of individuals and the parallel information flows--feedforward, feedback and data relating to goal attainment. As part of the design of the information system, a preliminary list of data items is specified and implications drawn concerning the impact of a centralized statistical system.



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## CHAPTER I

### NEED FOR AN INTEGRATED STATISTICAL SYSTEM





A characteristic feature of any society is the existence of laws--norms whose violation evokes action both legitimized by and performed on behalf of the community. The laws may vary in the degree to which they are codified, the power of their enforcement, the procedures for establishing guilt, and the available sentencing alternatives. The common factor is that they are made and enforced by the group which holds power within the society (Becker, 1963: 17-18).

Over thousands of years societies have developed procedures of apprehending, trying and punishing offenders to minimize offences against the law. However, only recently have concerted efforts been made to scientifically examine the administration of criminal justice and to assess its effectiveness through increased research in the social sciences. An impetus to this research is the recognition of the impact which a changing technology has on patterns of behaviour and the belief that concerted study of social behaviour can produce an expansion of knowledge parallel to that which occurred in technical fields.

Developments in criminology and the administration of criminal justice exert reciprocal influences on each other. In the first instance, criminological studies contributed to the shift from the goals of punishment to those of rehabilitation. In turn, this emphasis on treatment



provided increased opportunities for research in that the study population was more clearly defined and efforts could be directed toward groups with a high potential of further criminal activity. In the future, the study of criminology and the actual application of procedures are expected to continue to be mutually reinforcing. The anticipation is that theoretical explanations of criminal behaviour will generate alternatives to present procedures and that administrative experimentation will examine the viability of these alternatives.

In the present, the application of criminal justice procedures involves a commitment to upholding the law, minimizing infringements of individual rights and doing both with the minimum of resources. When traditional means of social control weaken in effectiveness, attention focuses on upholding the law--making apprehension and determination of guilt more swift and certain. Those who express concern about preserving the rights of the individual must recognize the necessity for some degree of law enforcement. Their issues are those of equal application of the law, protection against unjust determination of guilt, and the development of means to actively assist the individual in both self-fulfillment and contributing to society. Efficient and effective accomplishment of these aims is the concern of program administrators.





Individually and collectively, these concerns suggest the need for improved information on the operation of the criminal justice system. Specifically, the evaluation of present and suggested procedures and programs requires an analysis of the interaction of system elements. The required information includes characteristics of the accused, the nature of the actions taken by the criminal justice agencies and the effectiveness of such actions.

The most obvious way in which the system parts are related is by the sequencing of the actions of the police, courts and correction agencies. Administratively, the number of cases in which police press charges directly sets the case load of the courts; processing large numbers of cases introduces time delays and accommodations in the judicial process. Similarly, the responsibilities of the correctional authorities are determined by the courts (not only the general figures, but also the numbers in each available sentencing alternative). For the correctional institutions, overcrowding results in a decrease in rehabilitative activities and an increase in custodial activities. A second way in which the system parts are interrelated is relevant when assessing overall goal attainment. The primary goal is to minimize the number of persons entering the criminal justice system while effectively



upholding the law. To assess the contribution of programs to this end, consideration must be given to the collective contribution of available programs; any specific program should be assessed in light of the load it is expected to assume. For example, to evaluate the success of probation, it is necessary to know whether a large proportion of offenders are being channelled into this program (that is, both good and poor risks) or whether only the best risks are being placed there. Information is needed on the specific kinds of individuals, in terms of both personal and offence histories, who are subjected to the various procedures.

Generally speaking, this type of background information on the interrelated nature of system parts has not been available. Present program evaluations have necessarily been conducted in a piecemeal fashion. Neither retrospective studies of administrative records nor one-time special studies can provide the required basic framework. What about the published summary information on the operation of the criminal justice agencies? To what extent do these publications include relevant information on the characteristics of the accused and on system actions? Is this information portrayed in such a way as to indicate the interrelated nature of the agencies?

The primary source of criminal justice statistics in Canada is the Dominion Bureau of Statistics series on





Criminal and Correctional Statistics. Although the series contains crucial data, there are gaps in coverage, problems of comparability and flexibility. Noticeably missing are the characteristics of the accused--even age, sex and marital status. (In Alberta, at least, this information is routinely forwarded by the courts.) Contrasting with this complete lack of information on adults, statistics on juveniles include age, sex, birthplace of the juvenile and his parents, and the occupation of the parents. Without rigidly defined and well supervised procedures for recording the latter variable, the reliability of the data can be seriously questioned.

Information on alternatives to incarceration prior to and during trial proceedings are not included in the DBS reports. For example, there is no count of the number of summons issued and the effectiveness of **this** procedure in assuring appearance at the initial hearing. Similarly the alternative of voluntary payment of certain types of traffic tickets is not enumerated. Statistics on bail are non-existent. Basic data required would include the number of accused persons seeking bail, the number of requests granted, the types of conditions imposed, the number of individuals able to raise bail and the time period required, as well as the number of bail forfeitures.

A general deficiency in the statistical series is the lack of data on the time lags involved in the criminal



procedures, particularly in the courts. Relevant information would include the number and purposes of remands, the time period of each remand and the total time from initial appearance to disposition of the case and where applicable, to determination of appeal results.

In assessing the work of the courts, information is needed on both the number of charges and the number of convictions. (Only the latter is recorded for summary offences.) Equally necessary is the number of guilty pleas occurring both on first appearances and in subsequent hearings. Separate notations should be kept for the alternative ways of processing indictable offences. That is, a record should be kept of the number of cases falling within the magistrate's absolute jurisdiction or the Supreme Court's exclusive jurisdiction. In addition, where the accused may elect his mode of trial, his choice should be recorded: trial by magistrate, trial by judge and jury, trial by judge alone. In those cases where preliminary hearings are held, the results should be noted.

Comparability refers to the degree to which data on separate but related events may be meshed. Since the criminal statistics are reported separately for the police, the courts and corrections, one can expect difficulties in connecting information from these sources. There are equally great problems of relating sequences of activities within any of these areas. A major difficulty in comparing





the police and the court statistics is that the former series is based upon persons (only the most serious offence is recorded) while the court statistics for summary charges deal only with offences. (Judicial statistics on both offenders and offences are published for indictable charges.) Even for indictable offences, comparability is hindered in that the police classify offences in terms of the level of government issuing the law--federal, provincial or municipal. Such a classification cannot be reconciled with the distinction between indictable and summary offences used in the courts. Further, the police statistics exclude traffic offences while the court statistics do not.

Looking only at the judicial statistics there are problems of following from one stage to the next: from a charge being laid, to a disposition being given, to having a sentence imposed. For example, a notation is made of the number of persons whose cases are heard in the courts, but sentences are expressed in terms of offences. No data at all are available concerning dispositions and sentencing for summary offences. Relating the judicial statistics to the correctional data is difficult because the latter uses the offence classification of federal, provincial or municipal, rather than indictable or summary, and parole data are published separately from the DBS series.

The problem of incomparability of data items is primarily a reflection of the administrative boundaries



between the police, courts and correction agencies. Information is collected and recorded mainly for use within each agency. At the present time, there is no way of following an individual's record as he moves from one jurisdiction to another.

To some extent the problem of missing data and data inflexibility are due to reliance upon published, summary information. Publishing data means being selective in recording events. DBS has been particularly concerned with maintaining comparability of data over several years, and therefore, has developed a standardized form for publishing the report. There is great value in maintaining comparability over time, however it does mean that decisions on the basic units for enumeration--offenders or offences--have long-lasting effects.

Because we are working only with summary information, we lose flexibility in the data handling; there are very few manipulations which can be performed to reveal further basic information. Aggregate or summary information is derived from data about individual units. Flexibility is lost when we restrict ourselves to using a single summary measure rather than maintaining the possibility of calculating several other such measures. The issue would not arise if the individual data were available for analysis. However, this is not the case for those working on the published statistics, nor is it the case for the government agencies who originally provide the data. The copies of the data retained by these agencies are not in a readily usable form





and in Alberta, at least, no analysis is made of them.

That the criminal justice agencies have been satisfied with the present degree of data inflexibility is a reflection of their general attitude toward the value of statistics. Statistics have been viewed as the end product of agency procedures--outputs so to speak--rather than as objects having feedback capabilities. Their preparation has become an end in itself. This is exemplified by the fact that procedures for recording statistics are separate from, rather than being integrated into, the day-to-day operations.

The problems of missing and noncomparable data as well as the difficulties of maintaining high coverage and data reliability may be partially attributed to organizational arrangements. For example, the large number of individual units which report to DBS make it difficult to consistently collect statistics from a large proportion of them. Consequently, coverage varies from year to year. The arrangement also means that few checks are performed on the reliability of the data--the extent to which the same incident would have been consistently recorded by different individuals. Even if the detailed information required for such checks could be transmitted to DBS, the task of cleaning the data would be overwhelming. (Data cleaning involves the resolution of inconsistencies in the data, the removal of illegal codes and in some instances the imputation of values to the data.) The need for such



checks is great--given the difficulty of maintaining standardized recording procedures in so many units.

Provincial autonomy means that there is a variation between provinces in the information items collected; Alberta sends certain information to DBS which Quebec does not, and vice versa. What is published is only the most basic statistical information supplied by all provinces. Serious federal-provincial cooperation is required to expand the series on Criminal and Correctional Statistics.

Given the specific information needs outlined above and given the inability of the published data to satisfy these needs, a proposal for a statistical system will be outlined. Basically, it will involve personal case histories that record system actions taken toward an individual as he moves through the criminal justice process. Creation of the files would be an integral part of the functioning of the agencies and would be computerized. A central statistical unit would be established to process and analyze the data. The issues of retaining flexibility and being able to portray the interrelatedness of system activities raise the possibility of using individual case histories. Part of the flexibility of individual data is that different units of analysis may be specified. For example, studies could be done either on offenders or offences. Secondly, individual data can be analyzed in depth. Rather than giving a mere description of distributions, several





variables may be considered jointly, specific groups of individuals may be analyzed separately and the degree of relationships may be directly calculated. Computerizing the records, necessary purely on the basis of the quantity of information involved, also adds flexibility. For example, computerization facilitates record linkage--the process by which decisions are made on whether two records should be considered "matched" given their degree of correspondence on several items of information. This procedure would allow the agencies to match special records retained for their own use with the composite records.

The procedures presently used to collect criminal data mean that they cannot be used to illustrate patterns of activities. Continuous records describing the individual's movement from one jurisdiction to another are required. Similarly the presently available data cannot be used for analysis through time.

The information base that exists and can be economically accessed tells us a great deal about...(certain variables)...at any one point, but tells us very little about how they transform over time. The latter are the most relevant information resources for policymaking and program evaluation in these areas. (Dunn, 1967: 263)

These difficulties result from certain procedures adopted in the agencies. First of all, no attempts are made to identify for statistical purposes those individuals who come into contact with any agency more than once. In all



the DBS reports on criminal justice the counts of accused involve one count for each time an individual is processed by the agency so a count of unique individuals is not available. Secondly, the published statistics cover an arbitrary time period of one year. No account can be taken of those cases which are recorded in the police statistics in one year, and the court statistics, the next. Similar difficulties are inherent in all published tabulations and they are routinely handled by considering trends over a period of years. Given the few sophisticated statistical methods available for longitudinal studies, there has not been general pressure for data amenable to this method of analysis. However, in criminology there is a pressing need for studies on criminal histories and even basic descriptive statistics would provide valuable information.

Consideration of the structural difficulties in collecting statistical data from several independent reporting agencies suggests the value of a centralized system. Such a system could perform the manual tasks of producing weekly, monthly and yearly reports. Secondly, it could clean the data by making comparisons across the agencies and over time. Thirdly, it could supervise and conduct in-depth studies for the agencies in addition to providing them with the assistance of persons trained in data analysis.

Since the value of the entire system rests on the quality of the data entered, the collection procedures





need to be integrated into the routine operations of the agencies. Through this means, data are recorded when collected, rather than having to be transcribed from one form to another. Given the necessity of well-developed patterns of cooperation between the agencies and the statistical unit, those recording the data would see the immediate benefits of accuracy and timeliness of reporting. Further, those individuals administering the programs, having the perspective of immediate feedback would be encouraged to further develop their recording procedures.

Up to this point the necessity of improved statistical information on the operation of the criminal justice system has been stressed. As well, suggestions have been put forward concerning the form and content of a statistical system of individual histories which is designed to meet the criticisms levelled at the present statistical procedures. The present study will assess the applicability of using individual case histories, the ease of implementing the proposed system, and the possible effects of such a system. To provide data on the basis of which these assessments can be made, a detailed study will be undertaken of present information handling procedures. Interest will be focused on the parallel movements of individuals and their data between agencies, as well as the general patterns, extent and importance of information sharing among the agencies.



The information flows will be analyzed through the use of systems theory. The applicability of this theoretical outlook to the study of interrelated organizations rests on its wholistic perspective; it considers overall patterns of relationships. Further, it considers both the internal and external situations, drawing out the implications for the organization of patterns of change and stability in its environment. That is, it considers social organizations as open systems. Information flow is an emphasized dimension of the analytical framework of systems theory for it has incorporated and elaborated upon the cybernetic model of feedback mechanisms. Since it considers organizations as goal-oriented, the perspective recognizes the importance of information flows for assessing goal attainment.

On the basis of the system analysis of the criminal justice procedures, the proposed integrated information system will be reassessed. Distinctions will be made between those criticisms of criminal statistics which it would eliminate and those it would not. Difficulties of implementing the system will be described, recommendations made regarding proposed stages of development, and suggestions made for precautionary measures. Speculations on the possible implications of such a statistical system for operating procedures and for the individuals being processed by the agencies will form the concluding remarks.



In capsule form the outline of the thesis is:

Chapter I - need for an integrated statistical system.

Chapter II - systems theory applied to the study of  
organizations.

Chapter III - methods of studying information flow within  
organizations.

Chapter IV - analysis of Alberta criminal justice system.

Chapter V - recommendations regarding an integrated  
statistical system.





## CHAPTER II

### SYSTEMS THEORY APPLIED TO THE STUDY OF ORGANIZATIONS



Increasingly, the framework of systems theory is being applied to the study of social organizations. Attraction to this perspective is based on its ability to incorporate divergent strands of thought within sociological theory. One strand is the structural-functional approach which focuses on those categories of activity either necessary for the continued existence of a system (survival model) or required for system viability and growth (effectiveness model) (Etzioni, 1960). Structural-functionalism basically treats social organizations as closed systems operating in a stable manner. Although writers such as Coser (1956) have described the positive functions of conflict within stably operating organizations, writers in this perspective do not consider strain and change as inherent and necessary for a system's continued viability. In contrast, conflict theory emphasizes internal strains and dynamic changes in the organization. It is the existence of organizational stability over time which is problematical for them.

Systems theory postulates change in an organization as the result of internal strains, of discontinuities between internal and external constraints, and of conflicting external requirements. The net effect of such changes, however, is a state of dynamic equilibrium in which balance among the divergent constraints is predicated on the continual



inflow from and outflow to the environment. Thus system theory recognizes that it is the open nature of social organizations that allows them to be simultaneously characterized by stability (equilibrium) and change.

The applicability of systems theory to the study of organization no doubt results from its origin in the perspective of general systems theory. Kenneth Boulding (1956) notes that general systems theory involves a level of theoretical model-building between the highly generalized constructions of pure mathematics and the specific theories of specialized disciplines. In contrast to the formal systems of mathematics, it seeks empirical referents; in contrast to theories of particular disciplines, it aims at more general knowledge. He sets two tasks for this perspective. The first of these is to point to similarities in theoretical constructions of various disciplines and to create encompassing theoretical models for them. To develop a 'system of systems' is the second and more ambitious task; such an effort would be expected to spotlight gaps in theoretical models and suggest how these might be bridged.

Boulding's main thesis is that general systems theory is the skeleton of science. In illustrating his claim, he constructs a hierarchy of systems according to the organizational complexity of their basic units. The first three levels concern closed, inanimate systems; the subsequent three levels refer respectively to cellular,





plant and animal life. Human beings constitute the seventh level; their social organizations and symbolic systems form the eighth. Completing his pyramid is the category of "ultimates and absolutes and inescapable unknowables."

Von Bertalanffy (1962) recognized that the main impetus to the development of general systems theory was the increased scientific study of systems located within the higher levels of organizational complexity outlined above. Specifically, this perspective was developed to meet the challenge of the biological and social sciences--to deal with organized complexity. Previously the methods of classical physics (the mechanistic model) had been applied to closed systems tending to run down and disintegrate. The corresponding method of analysis was to break complexes into their constituent parts. To deal with the interaction of component parts, Von Bertalanffy and others suggested general systems theory.

The interrelatedness of parts is certainly one of a set of characteristics defining a system. In the words of Parsons and Shils:

The most general and fundamental property of a system is the interdependence of parts or variables. Interdependence consists in the existence of determinate relationships among the parts or variables as contrasted with randomness of variability. In other words, interdependence is order in the relationships among the components which enter into a system. (Parsons and Shils, 1951: 107).



From a system's perspective what other characteristics should be included in a definitional set for the term "organization"? Certain to be included is the idea of a system forming a distinguishable whole which exists over time. In fact, Buckley (1967: 5) defines a system as "a continuous, boundary-maintaining assembly of parts." In the same vein, Sorokin (1967) suggests that a system must have a certain degree of autonomy from its surroundings. Although the system is separate from its environment, it is open to it, engaging in transactions of matter, energy and information. Such interchange is crucial to the system's viability, continuity, and ability to change (Buckley, 1967: 50). For this reason, Ackerman and Parsons (1966: 28) emphasize the relation between a system and its environment in their definition of a system as "an ordered aggregate embedded in and in interaction with, a fluctuating environment."

The links between external and internal actions of a system are emphasized by Miller and Rice (1967) who view a system as an import-conversion-export process. Adding to this conception, Katz and Kahn (1966: 16) point out the cyclical nature of these processes. "Our theoretical model for the understanding of organizations is that of an energetic input-output system in which the energetic return from the output reactivates the system."

The goal-oriented, self-regulating character of



organizations is underlined by Young (1966: 16). "Systems are man-created inventions for serving specific human objectives; they are purposeful, deliberate and rational, and they are also subject to modification so that their value may be increased." (While the phrase "partially rational" might be substituted in the above statement, the writer makes several relevant points.)

In summary form the preceding list of system characteristics produces a lengthy but informative definition:

An organization viewed as a system is a continuous, boundary-maintaining aggregate of interacting parts, goal-oriented and self-regulating, which in a cyclical fashion transforms inputs from the environment into outputs.

Running through the system's literature, there are two basic perspectives: that of process and that of structure. The process viewpoint emphasizes the input-throughput-output activities of the system and the structural viewpoint emphasizes a system as being a complex of elements or sub-systems standing in interaction.

Part of the definition of a system is that it behaves as a whole. That is, from a structural viewpoint, the characteristics of a specific element depends on the nature of other elements. From the process viewpoint, the nature of the parameters (input, process, output, feedback) are interdependent. These relationships are subject to empirical investigation to reveal patterns of relationships and to specify their degree of predictability.







Process integration has two main facets, the first being the coordination of the input, throughput and output stages and the second being the correspondence between the system product and the environmental demands. The former includes the question of whether the inputs enter, are processed and distributed in a smoothly flowing, synchronized procedure in which there is neither slack nor overload. Environmental demands to be met by the system product or service include those of timeliness, cost, quality, and quantity. It is important for process integration that information on variations in the internal procedures or information on environmental demands that are not being satisfied results in corrective action by the system.

The term "entitativity" refers to the overall degree of connectedness of the system parts. Total structural integration is an ideal. In empirical systems, stress and strain characterize the relations among the system parts and between a given part and the system as a whole. Non-symmetrical interchange between parts creates tension, as does a part's tendency to maintain an existent degree of functional autonomy and the system's pressure to control the part. (Autonomy of a system part refers to the extent to which mutual interchange with other parts is minimized.) (Gouldner, 1959: 157.) "The relations between parts viewed at a particular point in time constitutes the structure of the system at that time" (Buckley, 1967: 41). Basically,



system parts are "elements" or "subsystems". Depending on one's purpose, the elements selected for study may be roles, individuals or groups. There are several ways of distinguishing groups: on the basis of organizational structure (departments, branches), task performance, status, work specialization, power, interaction patterns (formal and informal) or demographic characteristics of the participants (Matejko, 1970: 26).

Elements grouped together on any one of the above dimensions may be considered a subsystem. For example, one definition referring to task differentiation defines a subsystem as "a major grouping of elements working together on specific, repetitive manipulations of matter, energy or information" (Carzo, 1967: 347). Although this statement is restricted to a specific dimension (task performance), it does illustrate in what ways subsystems may differ. First of all, the system parts (elements or subsystems) may involve differing amounts of energy and/or information. In this vein, Ackerman and Parsons point out that "those parts which are higher in information control those higher in energy and those higher in energy constitute the conditions for information flow" (Ackerman and Parsons, 1966: 33). The above definition of subsystems also indicates that the activities of the parts may be more or less routinized. That is, to varying degrees their actions may be predictable.



The subsystems isolated by Katz and Kahn (1966: 39-47) have a general applicability to social organizations. The production or technical subsystem refers to the throughput activities. Supportive structures of this subsystem extend into the environment to procure raw materials (matter and people) and dispose of the product. Also, they seek legitimation and support from other structures in society. The task of the maintenance structures is to support activities which lead to the fulfillment of role requirements. Internally oriented, this subsystem mediates conflicts between the expectations of individuals and the existing production structures. The adaptive subsystem is concerned with organizational change and is thus oriented to the environment. It attempts to achieve environmental constancy by bringing part of the external world under its control or by modifying the structure of the organization to fit the external demands. Direction, adjudication and control of the organization are performed by the managerial subsystem. Coordination and resolution of conflict among the substructures is one of its tasks.

Considering process rather than structure, Optner (1965: 26-27) defines input, throughput, output, feedback and constraint as the parameters of a system. Input refers to energy, information and matter which enter a system. Distinctions may be made between those inputs upon which some operation is to be performed, component placement







and replacement, and information about the environment and the system's operation with regard to it (Young, 1966:16-17).

The boundary of a system refers to the barrier conditions between the system and its environment and is definable in terms of a region of rapidly declining information and energy exchange (Katz and Kahn, 1966: 60-62). These transactions of inputs and outputs are essential for the continued functioning and growth of the system. Interaction with the environment is selective, the system having both filtration mechanisms to limit penetration and also regulatory mechanisms to control the rate and character of inputs. Both of these mechanisms are part of coding--the process by which potential inputs are rejected, or accepted and translated for the organization (Katz and Kahn, 1966: 22).

Rather than being undifferentiated, the environment is organized into various systems and thus "exchanges with the environment" primarily involve relations with other systems. One of the crucial inputs a system seeks is support and legitimation. Part of this support is expressed in continued requests for system products and services. Another part is expressed in the form of value patterns. Those activities by which an organization seeks support fulfil an "institutional function" according to Parsons and Shils (1951). That is, they create patterns of support among systems.



Output refers to energy, information and matter which enter the environment from the system. Included in this category are products, services and efforts to modify or retain certain characteristics of the environment (including support for the organization). Throughput is the transformation process by which the system concertedly acts on its inputs to produce outputs. This process is characterized by a given degree of division of labour, a mix of human and mechanical means of action and a pattern of control and coordination of organizational members.

Feedback is a secondary process; rather than being an aspect of throughput, it is a regulatory mechanism. There are information patterns connected directly with throughput. For example, information moves from one processing stage to a subsequent one dealing with the same input. Feedback occurs only when a comparison is made between such information and a desired state or range of values of a characteristic. Further, the message of whether or not there is correspondence must be returned to the original unit. Negative feedback, indicating noncorrespondence, is expected to trigger corrective action. Of course, each characteristic has a range of stability within which no control or corrective mechanisms are activated. How effective feedback mechanisms are depends on the timeliness of the information and whether or not the data meet the required degree of accuracy.





There are several degrees of sophistication in feedback mechanisms. First-order feedback measures output against a desired value and corrects for the immediately observed difference. Second-order feedback uses information plus decision rules to anticipate future requirements. Third-order feedback systems develop (with reference to system goals) new decision rules or modify the value of various methods of handling new conditions. Fourth-order feedback develops new problems to solve, innovates and controls goal-changing itself (Hare, 1967:127-128). Moving from first order to fourth order feedback there are fewer constraints and thus more decisions to be made by the process of feedback.

Basically, there are two types of feedback-- external, which relates to the system's operation in the environment and internal, which involves information sent back to one system part or process stage about its effect on other parts or stages. External feedback is the basis upon which the organization adapts to its environment; internal feedback regulates the throughput process and assists in maintaining cooperation in the social system.

The balance between the amount of internal and external information required by an organization depends on the nature of its goals. To what extent does it rely on the environment as opposed to the unity and support of its members for the achievement of its primary goals(s)?





This question attempts to characterize an organization as being more inward or outward looking and, on this basis, to indicate an appropriate balance between the extent of internal and external information.

Given the degree of openness of the system, the amount of feedback required from the environment or from the internal operations depends on their relative complexity. In a highly complex situation it is difficult, without specifically established means, to maintain awareness of the numerous variables involved and their relationships. Secondly, the amount of information required depends on the predictability of the situation. For variables with narrow value ranges, or with highly constant values, or with high known correlations with other variables, less information is needed. That the value of a message hinges on its unexpectedness is a tenet of information theory. Also affecting the amount of internal and external information required is the rate of change in these aspects. Where modifications are made to internal operations, information is needed on the effects of such actions. Similarly, more information is needed concerning a rapidly changing environment. The effect of system actions on the environment may be of particular interest.

In considering the environment, attention should be given to its complexity and predictability. Buckley (1967: 62) notes that the environment contains both variety



(different entities, with variable characteristics) and constraints (restrictions on the occurrence of all possible combinations of entities and characteristics). These characteristics of the environment influence the availability of input and the demand for system outputs (involving in both cases matter, energy and information). For example, as already indicated more information is required where there is greater environmental variety. Generally speaking, less information is directly needed about constraints although other information on how to modify or bypass the constraints is needed.

Environments differ in their causal texture--the uncertainty they contain. A placid, randomized environment is one in which characteristics having positive and negative valuations for the system are relatively unchanging in themselves and randomly distributed. A placid clustered environment is one in which the negatively and positively valued characteristics are grouped together. In such an environment, strategy emerges as distinct from tactics. A disturbed reactive environment is primarily characterized by the existence of a number of similar organizations. Turbulent field environments are dynamic in themselves (Emery and Trist, 1969). Corresponding to the range of environments from placid to turbulent, there are different organizational strategies which require increasing amounts of data in finer detail.



Feedback involves the comparison of some characteristics of a system's operation with a desired state or range of values. Although there are several different ways of categorizing these desired states or objectives, they may be roughly classified as concerned with either the internal or external situation. For example, Barnard (1954) distinguishes between effectiveness and efficiency. The former refers to the attainment of the formal (output) objectives of the organization and the latter, to the maintenance of cooperation in the social system through the satisfaction of individual needs.

Perrow (1970) distinguishes four types of organizational goals which relate to the environment: societal goals (referrent: society in general), output goals (referrent: the public in contact with the organization), product goals (referrent: the characteristics of the goods or services produced), and derived goals (referrent: the uses to which the organization puts the power it generates in the pursuit of other goals). He also identifies "system goals" which relate to the state or manner of functioning of the organization. Gross (1966) provides a more comprehensive view of system objectives. On the external dimension, he refers to the acquisition of resources on the most favourable terms and to the provision of outputs valued by members of the environment. On the internal dimension, the two objectives specified are







efficiency in transforming inputs to outputs and providing adequately for the continuance of the system.

System goals (regarding the provision of valued outputs) and other desired states should not be viewed as being a priori, consciously formulated objectives. Rather, they should be seen as arising out of intrasystem relationships as well as out of interaction between the system and its environment. The leeway that a system has in setting its objectives reflects the control or influence it exercises over its environment. Establishing these criteria is a recurring phenomenon.

The overall rating of a system's performance should take into consideration the dimensions of organizational effort outlined above. Georgopoulos and Tannenbaum (1957:535) define system effectiveness as "the extent to which an organization, as a social system, fulfills its (output goals) without incapacitating its means and resources and without placing undue strain on its members."

Modification of system objectives is only one type of system change. Buckley reminds us that there are always two opposing tendencies: morphostatis, processes tending to preserve or maintain a given form of the system and morphogenesis, processes tending to elaborate or change the system (Buckley, 1967: 58-59). The forces promoting change may be more external than internal depending on the openness of the system.



Katz and Kahn (1966: 24) indicate that a system's structure may change from time to time or even continuously without the dissolution of the system itself; the basic principle involved is the preservation of the character of the system. What overtime trends develop in the structure of an open system? Increasing differentiation takes place, that is, the system parts perform more and more specialized actions. Attempts to control and integrate the differentiated parts result in elaboration (increasing organizational complexity). The terms negative entropy and anamorphosis have been applied to these changes. Entropy is characteristic of closed systems: physical systems move toward a random distribution of their elements and biological systems run down and perish. An open system, however, imports surplus energy (more energy than it expends) and it is on this basis that negative entropy develops.

Increasing differentiation also means that interaction between the system parts decreases over time. This progressive segregation means progressive mechanization as the parts take on specific rigid tasks. To re-integrate and coordinate the parts, centralized decision-making and increased internal communication is required.

A system adapts to its environment by ingesting external forces or acquiring control over them; this merely involves the balancing off of opposing trends. It is the characteristic of negative entropy rather than adaptation





which moves open systems toward growth and expansion (Katz and Kahn, 1966: 23). Von Bertalanffy (1962: 23) illustrated that many systems follow simple overall growth patterns, for example, the exponential (at least within specified values ranges). System dynamism refers to the fact that the various system parts and parameters change at differential and differentially changing rates (Gross, 1966: 176). The term "leading parts" is applied to those sections in which small changes become amplified throughout the system.

The idea of an organization maintaining a state of dynamic equilibrium is based on the processes of internal adjustment, external adaptation and system growth. Von Bertalanffy (1968: 159) notes that, whereas closed systems must attain a steady state if they are to continue to exist, an open system may attain such a state through continuous change, inflow and outflow. In a state of "dynamic equilibrium" or "dynamic homeostatis," an internal balance of opposing variables is maintained by adjustment process which act to keep variables within their ranges of stability (Miller, 1965: 224). Externally, the system acts to control sources of variability. In order for an open system to adapt to its environment, Buckley (1967: 63) suggests that four characteristics are required of the system. It must have (1) some degree of plasticity and irritability; (2) some mechanism for





variety; (3) some ability to replace selection criteria or mechanisms and (4) some arrangements for preserving and/or propagating successful mappings. ("Mapping" refers to a system's attempts to match its procedures to the variety and constraints existing in the environment.) The dynamic nature of these adjustment processes means that any given system state may result from differing initial conditions and by a variety of paths; that is, open systems exhibit "equifinality" (von Bertalanffy, 1968: 40).

To summarize briefly, systems theory emphasizes the interrelatedness of the four organizational subsystems (production, maintenance, adaptation, and management) and of the process stages (input, throughput and output). Maintaining a favourable balance of exchange with the environment is crucial for the continued functioning and growth of an open system. It involves mapping environmental variety and constraints into its structure as well as extending control over important external units. Importing more energy than is required for operating purposes leads to increased structural differentiation and growth. Since organizations are goal directed and self-regulating, they require feedback to move them toward their objectives.

In characterizing organizations as open systems, emphasis was placed on the information required about the internal and external situations. The requirements for



information from these two sources depends on the openness of the system and the degree of complexity and rate of change in the environment. Internal information was shown to increase the integration among the subsystems and among the process stages of input, throughput and output. In general, information is required for the guidance of the system. Four levels of feedback were differentiated involving increased "decision-making" powers being vested in the control mechanisms. Thus information performs several functions which contribute to a system's continued viability and growth.

In this project, attempts will be made to indicate the integral nature of the information flows in the operation of the criminal justice agencies. Consideration of the information patterns will take place within the general framework of systems theory. The basic analysis of the criminal justice agencies, using the concepts elaborated above, will assist in the development of a preliminary model for an information system. McDonough (1963: 91) illustrates the importance of system's analysis as a preliminary step in the construction of a model:

A model must start with a 'structure,' meaning the general nature of the inter-relationships within it. Assumptions about structure must be made before one can collect data from the real system. The structure is developed by obtaining a verbal account of the decision-making process at each critical point in the system. This verbalization and structuring can be accomplished only through



the tedious task of asking questions and probing for answers on the part of the decision makers.





## CHAPTER III

### METHODS OF STUDYING INFORMATION

### FLOW WITHIN ORGANIZATIONS



Systems analysis has primarily been applied to the study of organizations in an attempt to increase their effectiveness and efficiency of operation. One general approach--that of operations research--involves the creation of a model of the organization's procedures and, with or without the use of computers, the testing of methods intended to improve its operations. The initial steps are the formulation of the problem (including the specification of those variables which are controllable and the selection of measures of effectiveness), and the construction of the model, usually on the basis of an analysis of the past operations. Then solutions are derived from the model using simulation or operational gaming, the model and the solution tested, and the solution implemented and maintained (Ackoff and Sasieni, 1968). Specific applications of this approach may be found in the literature (Young, 1966; Hopeman, 1969).

To perform operations research, one requires quantities of detailed statistical information about the operation of the system. In other words, the procedure utilizes already existent data and analyzes them in a particular fashion. Another approach to apply the system concept to the study of organizations (and the one used in this report) performs a systems analysis as part of the process of designing an information system. In this way, systems analysis is used to create a continuing



source of statistical data. The intent of the present study is to analyze criminal justice procedures--to indicate the movement of individuals and the flow of data among the agencies--and, on the basis of this analysis, to provide a preliminary design for an integrated statistical system.

Guidance on the general dimensions to be considered in analyzing social organizations are given by the framework of systems theory. It stipulates the specification of system and subsystem boundaries, the degree of system openness, the characteristics of the environment, the system goals, and the system processes. However, the methods for collecting in-depth data specifically related to information flows are not clearly outlined. One has to examine the procedures used in individual studies. Here the suggestions range from specification of very general stages of data collection (Martino, 1967) to highly detailed accounts of input/output analysis and data network analysis (Moravec, 1967). Methods such as these are primarily suited to already highly developed information systems. The extent of routinized data exchanges varies between organizations and is quite limited among the Alberta criminal justice agencies. Accounts of data collection procedures more relevant for the present study are found in several studies of the application of information systems to government agencies. These studies show a considerable degree of consistency in their methods and on this basis they are





taken as guidelines for the present study.

In reviewing these studies, attention will be drawn to the fact that analyzing the information procedures and providing a preliminary design for a statistical system are only two of several steps involved in developing and implementing a computerized information system. The description of these reports will emphasize the sources of data used in analyzing the system and the main design issues considered by them.

Several studies have been conducted on the application of computerized information systems to United States federal government agencies. In 1965 the Committee on the Preservation and Use of Economic Data (Ruggles, 1965) recommended the creation of a federal data centre. An evaluation of this report was prepared by E. S. Dunn (1967) who reiterated the need for a data centre and emphasized its importance as a service agency for other government departments. The study of access to U.S. federal statistics was continued through the work of the Kaysen Committee (1969). Each of these studies will be reviewed in detail.

In 1965, the Committee on the Preservation and Use of Economic Data presented a report to its establishing body, the Social Science Research Council (Ruggles, 1965). Over a three-year period the Committee had investigated, agency by agency, the problems of providing access to specific bodies of information. As a result, four main



problem areas were identified:

1. Policies for preserving economic data were shown to be inconsistent across the agencies. Concern was expressed that immediate efforts be taken to preserve these series.
2. Access problems were identified as being particularly acute for users outside the government. First of all, it was difficult for these users to find out what was available. Secondly, because the agencies were primarily geared to processing information for immediate administrative use or for publication, they found it difficult to meet specific requests for data.
3. Developing "usable data" involves the provision of clean, edited data with accompanying documentation on layouts, coding and programming. If data are to be made available for use by other agencies, or even the same agency after a period of several years, the data must be clean and well documented.
4. Disclosing the identity of individuals or organizations is a serious problem when working with original records describing these units. Specific methods such as the 1:1000 census tapes (containing individual census returns without identifying characteristics) exemplifies methods which may be developed to avoid disclosure.





As a result of their study, the Ruggles Committee recommended the establishment by the Bureau of the Budget of a federal data centre having interagency authority, computer capability, and service facilities to meet requests for data.

E. S. Dunn, as a consultant to the Office of Statistical Standards, prepared an evaluation of the Ruggles report (Dunn, 1967). Three topics were reviewed by the study; the essential requirements of a reference and referral service, a more extensive study of the machine-readable records and the cost of bringing them into a data bank, and the essential characteristics of an organization to provide facilitating services (such as file rearrangement, record matching, standard statistical routines). The main recommendation of Dunn's report is that the concept of a national data centre was appropriate if one broadened the concept to emphasize the role of service capabilities.

Kaysen (1969) was charged with considering ways to improve the storage and access to U.S. government statistics. Performance criteria selected for the statistical system were the ability to meet accelerating demands for data; to safeguard right to privacy; to most effectively use existing information, data gathering procedures and agencies; and to minimize the burden on respondents.

Shortcomings of the present system were identified as resulting primarily from the high degree of decentralization among the federal departments. Specific inadequacies included delays in receiving information, suppression of





micro information and the tendency to publish necessarily aggregated statistics, and the fact that safeguards of privacy were inconsistent across the various departments.

Inefficiency in the system was exemplified by duplications in the collection of data, by smaller agencies which operate independently and therefore cannot utilize the more efficient modern techniques, and by failure to use all the information potentially available in the data collected. The latter occurs for several reasons, including the inability to match relevant data from several agencies, the unavailability of original reports for further processing and an interpretation of confidentiality which sets barriers on the full use of information inside the government.

To remedy the difficulties identified, the committee recommended the creation of integrated data sets and the establishment of a central statistical agency. The agency, together with the Census Bureau, was to be placed under a newly created official known as the Director of the Federal Statistical System.

Paralleling the studies of the United States federal government statistical services, one section of the Canadian Glassco report is devoted to this area (Royal Commission on Government Organization, 1962). The work of this committee revolved around the need for statistical information for effective administration and formulation of public policy, for better-informed decision making by business



and labour, for social science research and for public discussions and debates on important issues. Integration of the federal statistical services was the theme of the report. Particular attention was given to comparability:

'Reliable' individual series of data may be produced in a number of different ways, for different definitions and concepts may be chosen, with equal validity, as the primary foundation. Recognition of the possible joint use of statistics means, therefore, that all the series must be designed from the beginning to facilitate joint use. (Royal Commission on Government Organization, 1962: 38).

In their view, centralization of the statistical services was preferral to decentralization. Having a centralized system would mean that the overall quality of data could be effectively improved, economies in operation could be realized, a series of regional offices could be established to conduct field surveys, more efficient use could be made of skilled manpower and electronic equipment, and exchange of knowledge could be facilitated among statistical experts in various subject areas.

Another Canadian effort to provide an integrated statistical service was the Oliver report on the feasibility of an inter-university social science research agency and data bank (Social Science Research Council of Canada, 1969). The functions of such a centre would be to maintain up-to-date listings of machine-readable data relevant to the social sciences, to act as a clearing house for requests for information, to assist in developing new techniques





of analysis, to promote compatibility in data handling, to provide advisory services to universities and to develop in researchers an increased knowledge and understanding of the methodology and techniques for handling large data bases.<sup>1</sup>

To this point, all the studies reviewed have pertained to the national level of government. On the state level, Hearle and Mason (1963) studied present patterns of information flow and created a master listing of items to be included in a centralized statistical system. A more intensive study conducted for the state of California by Lockheed (1965) Company recommended the creation of a federated information system. Studies have also been conducted to assess the feasibility of data systems for specific content areas. Examples of such studies are those relating to the Kansas health system (Kansas State Board of Health, 1969), the Iowa education system (Marker, 1964), and the California correctional system (Correctional Decisions Information Project, 1967).

Hearle and Mason, in their 1963 study, set out to create a master list of data items required by local and state governments. Their recommendations were based on data gathered through interviews with government officials and through a study of office procedures. Officials were

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<sup>1</sup>The latter objective could be realized through symposia such as the Conference on Government Information Systems sponsored by the Economic Council of Canada (1967).





asked what specific information they required for their operations and what additional data they would like to have. Included in the study of office procedures was an analysis of printed forms and filing methods, as well as the creation of a flow chart documenting information flow between government departments and units.

The major objectives of the proposed information system were to reduce duplication in the collection, storage and processing of data and to increase the accessibility and usefulness of these data. Specific design criteria were developed relevant to data collection procedures, output formats, file storage, accessibility of data, document storage and processing requirements.

A study of governmental information exchange in the state of California was undertaken by the Lockheed Missile and Space Company (1965). Sequentially the stages of the research were: preliminary analysis of present information exchange, development of a conceptual design, development of a preliminary design, cost-benefit analysis of the design, outline of a strategy of development and implementation.

In the preliminary analysis stage, the examination of present and proposed information handling activities involved specification of information requirements, information resources and the use made of comprehensive system planning. Those data requirements within and between



government departments as well as between the departments and the public were identified. Particular attention was given to the availability and use of Electronic Data Processing (EDP) equipment in the review of information handling resources.

Data for the preliminary analysis were gathered through a review of the literature on the application to government of information systems, as well as through a series of organizational studies. The latter drew upon four data sources: personal interviews with management and operating personnel, questionnaires completed by executives, agency-completed "organizational data requirements forms", and a collection of organizational materials such as operation manuals and policy statements.

Basic to the development of the conceptual design was a statement of the objectives of the information system. In the most general terms, the "Statewide Information System has the basic objectives of promoting maximum utilization of acquired information and improving efficiency in the handling of information" (Lockheed, 1965: 5-3). More specifically, the system would be expected to provide data for program evaluation, perform analysis requiring the total data base of the state, correlate data from various sources and facilitate rapid response to information queries. As well as the objectives of the information system, it was necessary to know the constraints imposed





on it, and the design criteria it was to fulfill. The constraints included technical, jurisdictional, implementation and legal requirements. System design criteria included the fact that it should be able to meet certain performance criteria; that it should be suitable for implementation in phases; that flexibility must be retained in its operations; and that it must facilitate the training of personnel.

On the basis of the analysis of the present exchange patterns and a review of system objectives, constraints and design criteria, a preliminary design for a state-wide information system was outlined. A major consideration was the issue of centralization/decentralization and the decision was to create a federated system and thus retain some of the advantages of each alternative. "Information Central" would form the hub of the organization and would be connected to regional processing centres by data communication lines. The basic functions of Information Central were to create and maintain an index of all information to which it had access, to retrieve information on request, to serve as a network for transmission of data and requests for data among the regional centres, to circulate information on file updates, to restructure files to match user requirements, and to analyze its transactions as the basis for further developing the system.

The preliminary design was subjected to cost/benefit analysis. Costs were specified for personnel,





programming support, hardware, and development experimentation. Benefits were categorized as cost avoidance and reduction (through increased efficiency), increased revenues, better services (particularly for statewide planning, service to the public, and interorganizational service), and new services. And to complete the study a development plan was outlined. It included suggestions for a strategy of implementation, a management organization pattern and plans for acquiring additional EDP equipment.

In 1969, Lockheed conducted a "requirements definition study" for the Kansas State Board of Health on the need for a health information system. The task of the study committee was to identify and characterize the information required for planning and evaluation of health-related programs and the sources and availability of information to meet these needs. Basic data for the assessment were gathered by the use of questionnaires. Contact persons were located within each organization which identified itself as a user or supplier of health information. In a questionnaire these individuals were asked to describe present information inputs and outputs of their agency and any future plans for modifying their information handling procedures. Specific questions on the exchange of information included a description of inputs and outputs by timeliness, availability, frequency, importance for operations, source of inputs, accuracy, predictive value,



storage medium and confidentiality. In addition, deficiencies were noted in current inputs; needed inputs which were not currently available were identified; and projections were made of information which would be required in the future.

In addition to describing the present patterns of information flow, an outline was provided of an ideal system. The Kansas Health Information System (KHIS) is designed to establish and maintain comprehensive health data files, a library of health-related reports, and directories to include health data sources, programs, and publications. With regard to the provision of data it is expected to facilitate data interchange among the various levels of government; promote compatibility among the systems; create a standardized index; process, retrieve and disseminate data routinely or on request; conduct research aimed at creating new health status indicators and developing simulation models; and offer consultation to the users of health information.

Combining the results of the present system analysis--who uses or needs health data, the kind of information used, the sources of information used and deficiencies in the data--with the specification of an ideal system led to suggestions for implementing a centralized statistical system. The "requirements definition study" indicated the scope of the problem and broadly identified goals, constraints and other implementation considerations. Further analysis





is required to provide a more detailed description of the system as well as to develop, pretest, demonstrate and evaluate the planned information system.

The regional study which has the greatest relevance for the analysis of the Alberta criminal justice system is the California Correctional Decisions Information Project (CDIP). In phase I of the project four activities were undertaken: system analysis, preliminary specification of information system requirements, preliminary information system design and plans for the development and implementation of the information system. The system analysis covered ninety major organizational units. Overall objectives of each correctional agency, as specified in the founding statutes, and a description of the role of the agency in the administration of criminal justice formed the background of the study. In the analysis proper, concern was focused on control and treatment programs and management operations. Over two hundred nonunique decisions concerning individual case histories and management activities were identified. Within the case decisions four categories or subfunctions were identified--acceptance, diagnosis, program decisions and program implementation. Information requirements for system management were grouped into the subfunctions of planning, operations, achievement assessment (regarding specific program goals), and effectiveness in achieving agency goals.





Seventy individual case events were described in terms of what event triggered them and what information was required. The list of events was developed through analysis of present forms; for each report the users, purpose of usage, where the data was required and rates of usage were recorded. In addition, several experienced personnel were asked to write out lists of data items needed for decision-making.

For the management information events, only very general requirements were outlined. Serving as the basis of the analysis were current management reports, interviews, and informed judgments on what information about the seventy case events would be required by management.

The preliminary specification of the information system design focused on (1) requirements of the system as a whole with regard to input, processing, output, system evaluation and system security; (2) performance requirements--including storage, remote access, and backup storage; and (3) personnel requirements.

Models were prepared for both the total system and the subsystems (the reception centre, institutions, field services, and management information services). A description was provided of the agencies to be served, the steps in the general flow of information items, and the structure and content of the four major files which contain offender, program, standards and management data.



The reports which have been reviewed to this point range from highly inclusive studies of all types of information collected by a wide spectrum of government departments to studies of information pertaining to a single topic which is processed by a few agencies. It would be instructive to compare the present study of criminal justice information in Alberta against this background. First of all, this study obviously involves only one topical area. Secondly, it does not consider the range of information items included in the above studies. Rather than dealing with the totality of information required for decision-making, general operations, research, planning, and program evaluation, the present study is more restrictive. Its focus is on information about the individuals processed by the system and the system's actions with regard to them. As such, it provides only the most basic data for research and program evaluation.

There are primarily two reasons why interest is restricted in this way: (1) The present system now operates with very little aggregate data and virtually no individual data in a form suitable for analysis. This means that there is not a large, well established pattern of data flow upon which to design an information system. (2) Partly as a result of this lack of data and partly for other reasons (such as the difficulty of operationally defining the "success" of programs), very little assessment is being made of operating procedures and programs. Program





administrators are thus not in a position to indicate what additional information they require. For these reasons, it was deemed advisable to narrow the focus of the study to possible ways of creating an initial data base.

The studies of federal and state information systems were all aimed at integrating voluminous amounts of data, most of which was already in machine-manipulable form. Information systems were designed primarily to integrate data from these highly decentralized agencies. By contrast, Alberta is just embarking on the computerization of several series of social data. Thus there is an opportunity to use an integrated approach from the beginning. It will be possible to build compatibility into the system, rather than having to impose it on already existent procedures.

To provide an initial framework for the system analysis, the movement of individuals between agencies will be documented and a flow chart prepared indicating the police, judicial and correctional procedures taken with respect to the individuals. As reflected in the flow chart, the most basic distinctions in the methods of handling adults relates to the distinction between indictable and summary offences. Particularly when a preliminary hearing is required for an indictable offence, there are several differentiations in procedures.

The processing of juveniles will be illustrated separately as it involves some distinctly different alternatives





available to the correctional agencies. For example, the police have the option of administering a warning to a juvenile rather than proceeding with judicial action. Also, in Alberta, the court cannot directly commit a juvenile to an institution; instead commitments are always to the care of the Social Development Department. The latter agency is presently engaged in widening the range of program alternatives, particularly those which are community centred.

In addition to the preparation of the flow chart, an analysis was conducted of the published criminal statistics. These efforts were primarily directed at identifying gaps in the data, evaluating the comparability of data from several sources and examining the need for integrated data on the operations of the system as a whole.

The primary source of information for the system analysis were personal interviews conducted with individuals in charge of record-keeping in the various agencies. Selection of the agencies was based on the flow charts and thus involved only governmental departments. Interviews were conducted with both the Edmonton and Calgary police departments, Provincial Adult Probation Branch, magistrate's court (Edmonton), Supreme and District Courts, juvenile and family courts, Social Development Department, National Parole Service and the provincial jails at Fort Saskatchewan and Spy Hill (Calgary). The basic objective was to gain background knowledge of their information-handling procedures.



The interviews were partially structured and included questions on the steps through which an individual passes after making initial contact with the agency, and the corresponding records kept of agency actions on his behalf.

As background material, standardized forms were used to describe the agency records. The items recorded on the form were grouped into: the basic identifying characteristics of the record--the agency creating it, its title; the purpose for which it was collected; the nature of the records--units enumerated, their basis for inclusion, the geographic area covered, the volume of records, the storage medium and any referencing system used; the data collection procedures used--whether it involved checking existing files, the procedures used in creating the record, any entries made at a later date, the comprehensiveness and reliability of the records; the content--data entries, particularly any numerical links to other records; and the availability, confidentiality and use made of the records outside the agency.

The information gathered was in the form of the flow chart. Together with the analysis of the published statistics and the personal interviews, it was used to analyze the data flow among the various criminal justice agencies in Alberta. It was further used in developing a preliminary design for an integrated statistical system.



## CHAPTER IV

### ANALYSIS OF ALBERTA CRIMINAL JUSTICE SYSTEM





The system analysis of the Alberta criminal justice agencies will form the basis for a preliminary design of an information system. As such, the analysis will emphasize the nature and availability of data, as well as the patterns of exchange, and the relevance of the data for assessing goal attainment. A general description of the system boundary, the nature of the groups in the environment, the nature of the system goal and the way in which each of the major agencies contribute to its attainment, and an outline of the major subsystems will be given.

#### Boundary

The boundary of a system is definable as a region of rapidly declining energy and information exchange. Two characteristics of the boundary of the criminal justice system are its provincial and governmental nature. To varying degrees each of the major agencies--police, courts, and corrections--exemplify these characteristics. The major municipalities have their own police forces and the other areas of the province are policed by the Royal Canadian Mounted Police. Steps are now being taken to limit the autonomy of the municipal forces by bringing their activities under the purview of a provincial police commission. The R.C.M.P. already report to the provincial Attorney General as well as to their own Federal Commissioner.

In contrast to the only partial control of police



activities by the province, administration of the courts is centralized under the Department of the Attorney General. Section 92(14) of the British North America Act granted the provinces exclusive powers to create, organize and maintain provincial courts. The Federal government was given the power to create a court of appeal for the whole of Canada and other national courts to administer the laws of Canada (section 101). Under this legislation the Supreme Court of Canada and the Exchequer Court were established. (The latter court has a narrow sphere of criminal jurisdiction which includes offences under the combines legislation.) All administrative personnel in the provincial courts as well as those judges presiding in magistrate courts are appointed and paid by the province. The federal government appoints and pays the judges of the Supreme, District and County Courts, and in addition, both the judges and subordinate officers of the national courts. (Judges of provincial courts are selected from the legal profession of the individual provinces.)

In the correctional sphere, provincial departments supervise both adults and juveniles placed on probation. (The province has delegated the responsibility for juveniles in Edmonton and Calgary to these municipalities.) Although parole supervision is federally coordinated, both the provincial Adult Probation Branch and voluntary associations are involved in researching applicants and supervising those placed on parole. The utilization of voluntary associations





in this capacity is the only instance in which nongovernmental agencies are directly involved in criminal justice procedures.

Only one correctional institution in Alberta is federally operated--the Drumheller Penitentiary. The power of the federal government to create and operate such institutions is specified in section 91(28) of the British North America Act.

## Environment

### Federal Government Departments

The environment of the criminal justice system is primarily composed of government departments, voluntary agencies, professional associations and the general public. Constraints are set on the operation of criminal justice in Alberta by the federal Justice and Solicitor General's departments. They exert their influence by developing or changing federal legislation such as the Criminal Code, the Young Offenders Act, the Police Act and legislation regulating bail procedures. Such changes are made after consultation with the provincial departments concerned. However, since they must apply to the whole of Canada, they often do not meet the expectations of individual provinces. The federal government's responsibility for criminal legislation is outlined in section 91(27) of the B.N.A. Act. In this subsection both criminal law and criminal procedure are specified as being within federal jurisdiction. The provinces have legislative power over property and civil rights and





can provide penalties for the contravention of any provincial statute. "Provincial criminal law" is constitutionally valid except where it conflicts with federal legislation.

The Dominion Bureau of Statistics, Criminal Section, plays an important role as the source of information about the environment and to some extent about the internal operations of the system. Although the court and correctional information is compiled provincially, the police data are compiled only by DBS. The information supplied by DBS on the operation of criminal justice agencies in other provinces is crucial for comparative assessments.

#### Provincial Government Departments

There is limited interaction between the Attorney General and Social Development Departments on the one hand, and other provincial government departments on the other hand. W.T. McGrath (1969) suggested ways in which these latter agencies could assist the correctional institutions. He called for the increased assistance of education officials in developing academic and vocational programs; the health department in enlarging alcoholism programs, psychiatric services and correctional medical services; the Department of Labour in establishing prison industries; the Department of Youth in planning and operating recreational programs within the institutions and in establishing hostels for juveniles moving back into the community.



### Associations

Voluntary associations such as the John Howard Society and the Salvation Army are directly involved in supervising parolees. Organizations of ex-offenders, for example, the FUTURES Society were established to provide self-help community programs. Professional associations such as the Institute of Law Research and Reform, the Alberta Law Society and the Canadian Corrections Associations perform a primarily consultive role for the criminal justice agencies.

### Public

Public opinion is most directly concerned with the operations of the police since it is this agency which makes the initial inquiries and decides who will be taken into the system. Particularly prevalent issues are those relating to the discretionary powers of the police; the differential susceptibility to arrest of disadvantaged groups, and the impact, on individual rights to privacy and a fair hearing, of police procedures to obtain evidence. With regard to the courts, the issues of injustice (particularly differential treatment of certain groups of offenders) and time delays are the most widely discussed. The public questions whether the correctional institutions do not, in fact, promote criminal behaviour, and also interprets the institutional administrators



as being more concerned with custodial than rehabilitative functions. As well as directing their concern at the operation of the criminal justice agencies, members of the public press for changes in the criminal law. At the present time the issues of abortion, marijuana and capital punishment are being debated.

Through its municipal and provincial taxes the public supplies the financial resources for the operation of the criminal justice agencies. Ordinarily the provision of financial inputs is dependent on the effectiveness with which an organization operates. However, in the criminal justice sphere and in several other government agencies, the supply of resources is divorced from the effectiveness of the system's operations. In part, this is due to a lack of comparative information on the agency activities and their contribution to the goal of protecting the public.

### Goal Attainment

The overreaching goal of the criminal justice system is to protect society from seriously harmful and dangerous conduct. Usually in assessing this objective the term "crime" is applied in a restrictive manner. An inclusive definition of crime would involve acting (or failing to act) in such a way as to contravene a legally proscribed rule. The Ouimet report urges the use of a more restrictive definition; the report stresses that only those actions





which are substantially damaging to members of the public and which cannot be restricted by other social or legal means should be considered crimes (Canadian Committee on Corrections, 1969: 12). This recommendation has the same intent as Howard Becker's suggestion that consideration be limited to those statutes which are actively enforced by the police and actively upheld by public opinion (Becker, 1963: 2).

What would constitute evidence of goal attainment by the criminal justice system? Certainly a situation in which a minimum number of persons were being processed by the criminal justice agencies, and yet the law was being upheld, would be supportive evidence of effective programs operating to protect the public. Each of the criminal justice agencies attempts to "deter" persons from engaging in criminal behaviour through the use of sanctions and/or segregation of the offender and/or rehabilitative programs.

The police attempt to deter offenders through the use of their powers of surveillance and apprehension. Police surveillance minimizes the opportunities for criminal activity to go undetected. Apprehension, on the other hand, may involve holding an individual in police custody so that he is physically prevented from committing crimes. Alternatively, apprehension may act as a psychological deterrent if it is a swift and certain result of criminal behaviour.



Only limited statistical data is available which can shed light on the veracity of this claim of swift and certain apprehension. In 1967 of the crimes known to police, only 24% were cleared by charge and this value is an average computed over several offence categories with markedly different clearance rates (Dominion Bureau of Statistics, 1967). Such figures cast serious doubts on whether police actions can be viewed as having a psychological deterrent effect.

It is through their power to decide guilt or innocence that the judicial agencies act in two ways to minimize the number of persons being processed. First of all, they sort out those individuals whose cases should not be considered further. Secondly, the court actions may act as a deterrent--if they can be shown to result in a high number of convictions and the imposition of substantive sanctions. The statistics available to evaluate this latter claim include the fact that in Alberta in 1967, 92% of "persons" charged with indictable offences were convicted (Dominion Bureau of Statistics, 1967).

The correctional agencies act to deter crime by exercising control over the individual--ranging from the imposition of relatively few constraints, as in some probation orders, to stringent constraints in maximum security institutions. In addition, the correctional agencies attempt to deter criminal behaviour by rehabilitating





the individual. It is this latter objective which is currently emphasized by correctional authorities.

### Structure of the System

To this point, no subsystems have been isolated; instead discussion has centred on the three main agencies--the police, the courts and the correctional institutions. However, an examination of the patterns of coordinated action and information flow suggests that two basic subsystems may be delineated: one determining whether or not a criminal act has been committed and the other undertaking remedial action.

The former subsystem is based on the extensive interaction between the police and the courts. First of all, it is the police who determine whether or not there are reasonable grounds to believe that a criminal act has been committed and therefore that a charge should be laid. (It is police action in almost all cases which initiates court proceedings. A private citizen can lay an information and this is probably more common in juvenile than in adult court.) Rather than laying a charge against a juvenile, the police have the option of issuing a warning, which is also an official action. The type of charge laid by the police largely determines how an individual's case will be processed in the courts; this is because summary offences and the various categories of indictable offences are handled



quite differently.

Further cooperation is required between the courts and the police to bring a person in for a court appearance. The police officer requests a justice of the peace or magistrate to issue a warrant for arrest or a summons. In either case, the police are further involved; they must either locate, arrest and detain the individual or they must personally serve the summons. (In juvenile court notices of investigation are mailed, not personally delivered.) If the accused is taken into custody and requests bail, the police must arrange for a justice of the peace or judge to consider the request. Only very limited powers to grant "bail" are presently held by the police. (For summary offences they can issue a Form of Deposit which is roughly equivalent to a bail bond.) If an individual fails to appear for any court appearance the police may be issued with a warrant for his arrest. Also during any trial proceedings the police are usually directly involved in giving evidence.

There are minimal contacts between the police and the institutions. Interaction primarily involves transporting individuals for long remands, for committal, or for appeal hearings. When the proposed remand centre is built in Edmonton one reason for contact will have been removed. For institutions seriously concerned with developing



rehabilitative programs the interrupted periods of detention and the great deal of time devoted to transporting offenders can only be seen as a disruptive force.

Just as the contacts between the police and correctional institutions are minimal, so are those between the court and these institutions. Only in appeal procedures are the two agencies even dealing with a given individual at the same time. With regard to juveniles, the distinction between the actions of the court and the correctional institutions is clearcut because the courts cannot directly commit an individual to an institution; instead they place an individual under the custody of the Social Development Department.

A link is formed between the subsystems of the police and the courts on the one hand, and the correctional agencies on the other hand, by the adult probation department. At the request of the judge, and after guilt has either been admitted or established by the court, the probation officers develop a presentence report containing information on the personal characteristics of the offender as well as his offence history. Liason with the police detail in the courthouse is particularly important for obtaining the person's offence history and the police incident report. As well as preparing presentence reports, the Probation Branch also performs a correctional role by supervising those adults placed on probation.





The activities of the National Parole Service also act as a link between the subsystems. First of all, the Parole Service and agencies under contract to it (including the provincial probation department) work very closely with the institutions. To consider an individual for parole, an institutional report must be submitted, including the assessments of the individual's academic or educational supervisor, a social worker, a committee of the staff and the superintendent of the institution. In preparing an offender for possible parole, interviews are conducted in the institutions. Further cooperation is required between the two agencies to actually place an offender on parole. With the increasing use of day paroles, the institutions themselves are involved in supervising paroles which are authorized by the Parole Service.

Some connections are also maintained by the parole service with the police and the courts. For the review of parole applications the police provide both Finger Print Section Files and a police incident report; the latter contains not only details relevant to the charge, but also assessments of the offender's attitude toward the police and whether the police would object to his release. In Edmonton, the city police automatically write up reports on anyone receiving a sentence of twelve months or more. Contact is also maintained between the police and the Parole Service when, as a condition of parole, the offender



is required to report on specified days to police headquarters. The R.C.M.P. execute any warrants of suspension issued by the Parole Services. Interaction between the court and the Parole Service occurs only when a parolee has been apprehended on a warrant of suspension or brought before the court for failing to live up to the conditions of parole. The magistrate merely issues a warrant of committal.

#### Information Flows

Within each of the subsystems the actions of the agencies are highly related in terms of operating procedures and this is reflected in the type of information which flows between them. Most of the information which is circulated relates to the processing of individual cases, and is recorded in the form of legal documents or in the form of on-the-spot reports. For example, warrants for arrests, warrants of committal, recognizance forms, informations, and indictments are all basic legal documents necessary for the day-to-day operation of the system. In some cases, data, rather than being recorded on forms in one agency and thereby transmitted to another agency, may be personally transmitted. For example, police personnel in the courts record each warrant or summons issued by the justice as well as the final dispositions of all cases in which they originally laid the charge.





Data on day-to-day operations are necessarily limited to specific geographical areas and thus there are problems of exchanging information between these local offices. Examples of data which are difficult to obtain for other areas of the province include: information on summary offences (police); information on persons presently on bail, probation or parole (courts); information on former institutionalization within the province and data on any programs in which the offender participated (corrections). Thus, we see that the problem of "localized information" affects each of the **major** agencies.

Only very limited information is available in summary form. Basically it serves two purposes: for publication in annual reports, both provincial and Dominion Bureau of Statistics reports, and for administrative purposes. Given that the provincial reports are made public a full year after the end of the fiscal year to which they refer and that the most current DBS report of Statistics of Criminal and Other Offences is for the year 1967, these sources can hardly be considered to have immediate feedback value. One administratively oriented data collection is the set of court returns; they are used primarily to keep track of the payment of fines. "Activity reports" kept by the probation and parole agencies record the number of personal interviews, number of home visits, number of telephone inquiries and so on. Similarly, in the juvenile



courts, monthly reports are prepared for each judge with individual entries on the cases he has heard. Such "activity reports" may have some value for supervisory purposes, but none for evaluating goal attainment by the agencies.

The analysis of the Dominion Bureau of Statistics (1967) series on Criminal and Correctional Statistics has already indicated several problems inherent in the published data. In considering the procedures which are used to record the data for these reports, an even greater degree of inflexibility in the data was uncovered: the original records are not amenable to further analysis. For example, in the Edmonton Study an attempt was made to utilize, for research purposes, files kept by the juvenile court. The investigator's assessment of the records was that "most of the court's material is neither available, nor comparable, nor necessarily relevant" (Kupfer, 1967: 227). In other words, the published statistics lack the flexibility required for analysis and the individual records are not in a form suitable for analysis.

Ruggles (1967) found a pattern of information availability which closely resembles the one outlined above. He states that:

... the present Federal statistical system is primarily geared to the production and processing of information for immediate administrative use or publication. Thus the present organization of Federal statistical operations does not lend itself to optimal use of the vast amounts of existing information,





despite the fact that this use could be achieved at low data processing cost.  
(Ruggles, 1967: 201)

It is particularly important that summary information be available for assessing goal attainment. However, presently existing statistical information has little feedback value for assessing agency effectiveness. This is primarily because the available data relates to the activities of each agency independently. The lack of data amenable for studying the pattern of agency activities, and relevant to the continuous processing of individuals by several agencies means that there is no basis for comprehensive, continuous and long-ranged planning.

The lack of data which is appropriate for goal assessment varies among the criminal justice agencies. Applying the concepts of input, throughput and output to the actions of the system reveals patterns in the availability of relevant information. The police are the gatekeepers of the criminal justice system for they determine the intake of persons on criminal charges. Their greatest need is for information on the characteristics of offenders and the extent of crime in the environment. Not only is the ratio of "offences known to the police" to "total offences" presently incalculable, it also unquestionably varies over time and offence categories. Similarly, there is no assurance that those persons apprehended and charged by the police are representative of all criminal offenders.





Thus on the input boundary, information is particularly difficult to obtain. Some data sources which are now being developed for use along with the police reports as multiple measures of crime include studies of self-reported crime, victimization surveys, insurance statistics and hospital records.

Once individuals are taken into the system, there are separate administrative indicators of effectiveness available for each agency. For example, the police rely upon indicators such as the percentages of known cases that are cleared by charge, as well as the number of warrants and summons issued, the number of arrests made and the number of warnings given. There are few indicators which can be used to reflect whether fair hearings are being conducted by the courts. One such indicator is the number of appeals procedures which are undertaken and sustained. In Alberta in 1967, 398 appeals were made on summary offences (372 by the accused and 26 by the Crown) of which 42% and 46% respectively resulted in some modification to the disposition or sentencing. For indictable offences heard by the Appellate Division of the Supreme Court in the same year, 637 appeals were made by the accused (38% sustained) and 74 appeals by the Crown (53% sustained) (Dominion Bureau of Statistics, 1967).

In the correctional agencies, short term assessments of probation and parole are indicated by the percentage



of persons in these programs who successfully complete their terms. For the correctional institutions the appropriate measures of effectiveness would be recidivism rates. Because the correctional programs and particularly the institutions are located on the output boundary of the system they are the only agencies for which data on reentries to the system could be used as measures of effectiveness. However, given the statistical records now available, any recidivism rates which could be computed would be most misleading. To begin with, continuous histories are only maintained for indictable offences. Even the records of persons who have committed an indictable offence and, therefore have a Finger Print Section file, do not contain summary convictions. The correctional institutions do not have files with enough information to compute even "indictable" recidivism rates because only the last institution to which an individual was sentenced receives notification of a further conviction. "Thus, prisons operate like businesses that do no bookkeeping and remain in blissful ignorance of their gains or losses" (Glaser, 1969: 5). Recidivism should not be viewed as either occurring or not occurring; it should be studied as a pattern. Are the offences generally less serious in nature? Are the time periods between offences lengthening? This type of assessment would require that longitudinal case histories be created.

Each of the indicators described above pertained





only to the activities of a single agency. To analyze the individual contributions of the police, courts and corrections, as well as their combined efforts toward the attainment of the overreaching goal, significantly different information is required. First of all, one needs data which can portray the inter-connectedness of the system activities--patterns of processing types of offenders. Secondly, one requires data which form a longitudinal picture of the impact of particular patterns of system activities on the return of individuals to the criminal justice system.

Two major problems now impede assessment of the effectiveness of correction endeavors. The first is the practice of compiling correctional statistics on a cross-sectional basis (offenders dealt with on a given date or in a given period) instead of on a longitudinal basis (the rate at which offenders avoid or revert to crime in a given period following correctional efforts with them). The second problem is that when longitudinal statistics are compiled, they are derived from the files of only one or two of the several independently administered correctional agencies in an area. Because each agency's performance largely determines the cases received by the other agencies, it is difficult to assess the effectiveness of these agencies separately unless one has information on the criminality which follows releases from each of them.  
(Glaser, 1967: 121)



## CHAPTER V

### RECOMMENDATIONS REGARDING AN INTEGRATED STATISTICAL SYSTEM



As suggested in the analysis section the criminal justice system is highly integrated in terms of its day-to-day operations. Integration is highest within the two major subsystems: the first (which includes the police and the courts) acts to determine whether or not a crime has been committed, and the second (which includes the correctional institutions) acts to rehabilitate the offender. Given that procedures are well developed within these subsystems for transmitting information about the progress of individual cases, few modifications need be suggested.

One recommendation would be the establishment of provincial registries of persons presently on bail, probation or parole, as well as persons previously institutionalized within the province. (With reference to the latter list, the Finger Print Section reports could be used to provide data on institutionalization elsewhere in Canada.) These files are required to overcome the localized nature of information presently available. The creation of such registries has been recommended elsewhere:

The committee therefore recommends that there should be a central registry in each province for the purpose of maintaining a record of those persons charged with indictable offences who are on bail, so that this information would be readily available to the judge, magistrate, justice or police in connection with a further bail application. (Canadian Committee on Corrections, 1969: 111)

A similar recommendation was included in the Report of the Alberta Penology Study:





A central provincial probation registry should be maintained so that an offender who has been on probation in one part of the province and later (is) convicted of an offence in another part of the province will be identified.  
(McGrath, 1968 : 120)

The primary purpose of establishing these registries is an administrative one. Therefore the registries should be available for immediate consultation by personnel in the criminal justice agencies. Only data which can be used to identify individuals and to specify the conditions under which they were placed on probation, on parole or on bail need be included.

In contrast to the minor improvements suggested for operational data, major changes are required in the processing of statistical data. It has been noted that the only repository of statistical data at all suitable for analysis is the Dominion Bureau of Statistics (1967) series on Criminal and Correctional Statistics. Analysis of these reports uncovered serious gaps in the data, incompatibility between information from the major agencies, inflexibility in handling the necessarily aggregated data and a lack of reliability checks and estimates. Examination of the present statistical procedures in the Alberta criminal justice agencies confirms the above assessments. No statistical records were identified which would remedy any of the above criticisms. (The one exception is the fact that certain variables declared "missing" in the DBS reports were discovered to be recorded on the court returns.)



In fact, the problem of inflexibility which is inherent in aggregate, published data was revealed to be even more serious in the provincial agencies because the individual records were not in a form suitable for analysis.

To deal effectively with the difficulties inherent in available statistical data, the creation of an information system composed of individual case histories is proposed. In contrast to the administrative nature of the registries, the information system would be developed for statistical purposes only. The use of individual case histories as the basic recording unit is recommended for several reasons. Only records which follow this format can provide both longitudinal data and data which crosses organizational boundaries. Only case histories are simultaneously amenable to the studies of the offender and studies of the operation of the criminal justice agencies; only case histories can provide the flexibility of handling which is necessary for research and evaluative planning.

Two major principles should be applied to the development of an information system containing case histories: (1) the system is intended for the purposes of research and evaluative planning rather than for management problems such as the coordination of facilities, resources and personnel or for the supervision of work procedures; (2) it is intended to be used for statistical purposes only and not for processing "enquiries" on individual records,





not even by agency personnel. An implication of the first principle is that we are considering a "fundamental" as opposed to a "total" information system. (Moravec, 1967: 128). A total system attempts to coordinate for inclusion in the system the data required for all levels of management and operations. This may be accomplished either by having a single data bank containing all the information or by having subsystem banks which are connected by electronic communication links. In contrast, the fundamental system includes only "essential" data required for the effective operation of the organization. Data required by only one subsystem is stored and processed separately.

For research and planning purposes, additional information is required. The information system would be able to assist in gathering further information in several ways: (1) it could be used to generate sampling frames in order to conduct special studies; (2) it would provide background information against which all detailed analyses should be compared; and (3) data retained by the agencies for their own use or data compiled through special studies could be linked to the data base to increase the amount of information available for analysis.

A preliminary list has been prepared of the content of the individual case histories. To finalize the items the list should be examined to assess the value of each variable and to develop procedures for their collection.



Data Entries for Criminal

Case Histories

Data to be Recorded by Each of the Agencies Concerning  
The Accused:

Full name  
Social insurance number  
Sex  
Date of birth (day, month, year)  
Marital status  
Educational achievement  
Permanent home address, if available

Data to be Recorded by the Courts:

Known aliases  
Police department  
Police file number  
FPS number

Information

(For each information laid against the accused)

Policeman laying information

Information control number

(For each charge against the accused on the  
same information)

Act, section, subsection

Number of counts

Information control number for charges arising  
out of the same incident

Warrant of arrest

Date of issue (day, month, year)

Justice issuing warrant

Instance (initial action/after summons/after  
breaking bail)

Arrest

Arrest with/without warrant

Date of arrest

Summons

Date of issue (day, month, year)

Justice issuing summons

Date on which summons is served



Bail

Court  
Justice  
Date of request  
Instance (prior to initial appearance/prior  
to committal for trial or preliminary hearing/  
after committal/pending an appeal)  
Bail request of first instance/appeal  
Type of bail (cash or property, with or without  
sureties)  
Amount  
Date of endorsement

Warrant of Suspension (for parole violation)

Date of issue (day, month, year)  
Justice  
Date on which warrant is served

Initial Appearance

Date (day, month, year)  
Judicial district  
Court number  
Docket number (number, year)  
Judge  
Crown prosecutor  
Defense attorney  
Jurisdiction (summary offence/indictable--  
magistrate's absolute jurisdiction/indictable--  
election/indictable--Supreme Court exclusive)  
Election (judge alone, judge and jury, magistrate)  
Plea for trial by magistrate (guilty/not guilty)  
Accused waives preliminary hearing

Preliminary Hearing

Date (day, month, year)  
Judicial district  
Court number  
**Docket number**  
Judge  
Crown prosecutor  
Defence attorney  
Charge (other than original charge)  
Adjudication (accused discharged/committed  
for trial)  
Plea (guilty/not guilty)

Trial

Date (day, month, year)  
Judicial district  
Court number  
Docket number  
Judge





Crown prosecutor  
Defence attorney  
Type of trial (magistrate, judge and jury,  
judge alone)  
Accused unfit to stand trial on account of  
insanity

Disposition

Date (day, month, year)  
Guilty plea  
Charge (act, section, subsection)  
Original/lesser charge

Charge withdrawn/dismissed

Verdict

Guilty  
charge (act, section, subsection)  
original/lesser charge  
Insanity  
Not guilty

Adjourned sine die

Parole revoked

Sentencing

Date (day, month, year)  
Presentence report (yes/no)  
Report number  
Time in custody  
Fine and costs  
Amount  
Time to pay  
paid  
committal in default of payment

Probation

Suspended sentence

Suspend driver's license

Bound over to keep the peace

Supplementary Adjournments (for adjournments  
following the first adjournment of the case  
to preliminary hearing, or to trial)

Date (day, month, year)

Judicial district

Court number

Docket number

Judge

Crown prosecutor

Defence Attorney



Adjournment (before plea/for psychiatric  
examination/to arrest/to waive to another  
judge/for disposition/for sentencing)

Adjournment at request of judge/crown/prosecutor/  
defence attorney

Adjourned sine die

Stay of proceedings

#### Appeals

By the accused from conviction/sentencing

By the Crown from acquittal/sentencing

(if leave to appeal is required)

date of application

decision on the application

date of the decision

(for each court to which an appeal is taken)

date of hearing (day, month, year)

judicial district

court number

docket number

judge

crown prosecutor

defence attorney

Decision on appeal

from sentence

from conviction

from acquittal

#### Data to be Recorded by the Correctional Agencies

##### Institutionalization

(for each institution in which the offender is  
placed)

date of institutionalization (day, month,  
year)

name of institution

institution identification number

##### Parole

Date of parole application

Disposition of parole request (denied/deferred/  
granted)

Date of disposition (day, month, year)

Date parole begins (day, month, year)

Length of term

Type of parole (ordinary parole/parole with





gradual release/day parole/short parole/  
parole for deportation/minimum parole)  
Conditions of parole

Release from institution

Date (day, month, year)

Reason (fines paid/successful appeal/time  
expired)

The content of the individual case histories follows very closely the format of the court clerk's return which was developed jointly by the Quebec Justice Department and the Dominion Bureau of Statistics. Entries from the correctional institutions, and entries relating to appeal procedures are not included in the Quebec forms. Also charges against several persons which arise out of the same incident can only be connected under the Alberta format.

An important question is how a single record can be created to include data from the separate agencies and to include data arising from charges laid at several points in time. Having one form to include each step through which the individual is processed (with regard to a single charge) resolves some of the internal difficulties of relating his records. However, there remains the problem of an individual being processed by each of the agencies more than once. It is proposed that the technique of record linkage be utilized to bridge the organizational divisions and the time gaps.

Record linkage is a process by which decisions



are made on whether data strings from different sources should be considered "matched" given the extent of their correspondence on several variables. The process is applicable to any type of unit (e.g., a person, an organization, a geographic area, an event) and it permits the combination of records either temporarily, such as for a one-time analysis, or for permanent storage. Extensive efforts have been made in Canada by Newcombe (1957) and Sunter and Fellegi (1967) to develop and perfect this technique. Several different purposes for which record linkage has been used include: population growth estimation studies (Sekar and Deming, 1949); reliability checks on data contained in two files; checks on the accuracy and comprehensiveness of lists as well as procedures to update them (Fellegi and Krotki, 1967); and for the purposes of social research (Simpson et al., 1965).

Record linkage is appropriate to the present task because the case histories are intended only for statistical purposes. The basis of the technique is to link data strings while maintaining certain errors levels. Error includes the number of linked but not matched records (those which in actual fact do not refer to the same unit) and also the number of not-linked but truly matched records. Errors are inherent in the process; one sets the linking rules to keep the two types of error within specified bounds. If the information in the case histories was to be





used for enquiries about specific individuals, errors of this nature could not be tolerated. However, for statistical purposes, because we know the exact extent of the errors we can interpret our data in light of this knowledge. A narrow range of values can be specified within which the population value will be, given a certain probability of error.

One minor disadvantage of using this technique is that identifying characteristics must be recorded in each of the agencies to maximize the effectiveness of the matching techniques. This results in a certain duplication of effort. However, some of the identifying information is needed by the individual agencies anyway. Further, this information will be valuable in checking the reliability of the data and preparing estimates of the error attached to each of the identifying variables. Duplication in recording these characteristics is essential for the effectiveness of the linking procedures; each piece of evidence assists in reducing error.

Several principles must be observed in the development of the statistical system. Involvement of operating personnel in the design and improvement of the system is essential--after all, the value of the system rests on the quality of the input. Commitment to the idea of a centralized statistical system, an understanding of the importance of the system, and a comprehension of the need





for standardized recording procedures act to insure quality reporting. Procedures for creating the basic records must be integrated into the day-to-day operations of the agencies as a further incentive for accurate recording. Recognition needs to be given to the fact that system development is a continuing, iterative process. Specific methods must be devised to insure system responsiveness to the changing needs of users, both researchers and planners.

Consideration should be given to three possible effects of the creation of an integrated statistical system: (1) impact on the confidentiality of the data, (2) impact on the way in which individuals are processed, and (3) impact on the general operations of the system. Each of these will be reviewed in turn.

There are several aspects to the issue of data confidentiality, some of which are relevant to present considerations. Basically three main issues may be distinguished: the accuracy of the data, authorized access and unauthorized access. The issue of accuracy includes the questions of how complete the record is, what procedures are taken to verify the contents, whether only 'hard' data are included, whether out-of-date information is periodically removed from the file and whether the individual has an opportunity to review and refute any entries. Most of these issues do not relate specifically to the computerized case histories. They are general



problems relating as much to the original data collection procedures in the agencies as to the specific information which is retained in the statistical system. Of course, the agency procedures are authorized and controlled through legislation.

With regard to the question of the record content, it is interesting to consider current proposals to destroy "out of date" criminal records. The Ouimet committee, for example, recommended that summary conviction records be annulled after a two year crime free period, and that indictable convictions be annulled after a successful Parole Board hearing following a five year crime-free period (Canadian Committee on Corrections, 1969: 409-410). If legislation along these lines is enacted, specific exemption clauses will be needed to retain such information in the criminal case histories.

The question of who is given access to the data is a relevant issue for the case histories. General concerns include whether there are restrictions, both internally and externally, on who may use the data; whether users are given access to only parts of files; and whether there are careful screening procedures to assure that only legitimate use is made of the data. As far as the case histories are concerned, the issue is whether data from other government departments may be linked to the criminal justice data base. Following the principles on which the criminal justice information system was designed,





linkages should be approved only for purposes of statistical analysis. Requests should be carefully scrutinized, and close supervision be applied to any such operation.

Unauthorized access is a more complex problem and involves intended, accidental, and statistical disclosure. Careful selection of personnel and the use of an oath of secrecy which provides penalties for disclosure are methods designed to combat the intentional release of information by data handlers. The issue of preventing electronic disclosure through wire-tapping, or other such means is receiving increased attention by the computer companies, and a series of preventive measures have been developed. Accidental disclosure can be expected to occur on occasion. Perhaps the only safeguard against this is to document such occurrences with a view to increasing the precautions.

Statistical disclosure refers to the fact that in releasing information, the population may be so narrowly defined that "information can be deduced from the published estimates that can be related to a particular identifiable respondent." (Fellegi, 1970: 4). A particular type of statistical disclosure is residual disclosure:

when a linear combination of published statistics results in a number which would, by itself, be a direct disclosure, then the publication of the statistics involved in the linear combination is a residual disclosure. (Fellegi, 1970: 8)

With regard to socio-demographic statistics, guidelines to check for statistical disclosures are generally intuitive



in nature, although attempts have been made by Ivan Fellegi to create mass-production (mathematical) methods of checking for disclosure. The Dominion Bureau of Statistics has drawn attention to the difficulties of checking a set of publications and they stress the geometrically increased difficulties of preparing tabular material on the basis of ad hoc requests from users (Fellegi, 1970). The issue of statistical disclosure is probably the most pressing confidentiality problem facing the proposed criminal justice information system. It must be kept in mind that this is a problem which plagues all statistical reporting units.

Beyond the considerations of confidentiality, the creation of the central statistical system can be expected to have an impact on how individuals are processed by the criminal justice agencies. For instance, the registries of persons on probation, bail and parole should result in a greater degree of control being exercised over persons in these categories. This is a legitimate objective, given that the individuals have entered into a contract with the government. The main value of the registry of persons who have been institutionalized will be to assist in rehabilitation. Information exchange will be facilitated among institutions. Given the type of programs which an individual has experienced in the past and the way in which he has reacted to them, programs can be more closely tailored to his needs. Care must be taken that information exchanged





by institutions relates primarily to academic or vocational training, rather than to disciplinary problems. The philosophy of the correctional institutions will be the primary determining factor in how this information channel will be used.

Only a clear and consistent statement of the operating principles of the criminal justice agencies can insure that the statistical system will not be misused. For example, commitment to the principles of individualized justice will de-emphasize any isolated pressures for conformity in sentencing which might result from analysis of the administrative data.

The particular benefits which the statistical system will yield need to be reiterated. First of all, it will decrease duplication in processing as the central agency can take on such tasks as routinely creating administrative reports. Secondly, it will act to increase the accessibility and usefulness of data generated by administrative procedures. Specifically, identifiable gaps in available data can be filled; comparability between data from several agencies assured; flexibility built in to the statistical system; and provisions made for checking the reliability of the data. The statistical system will be able to provide overtime and interagency data for analysis and thus contribute to research and evaluative planning.





Interest in a centralized statistical system originated in a desire for knowledge of present operating procedures and a desire to improve the effectiveness of the system. This last phrase emphasizes that the creation of the statistical system will result in changes. However, in contrast to the past, the changes should be initiated on the basis of confirmed information rather than on the basis of intuition and experience alone.



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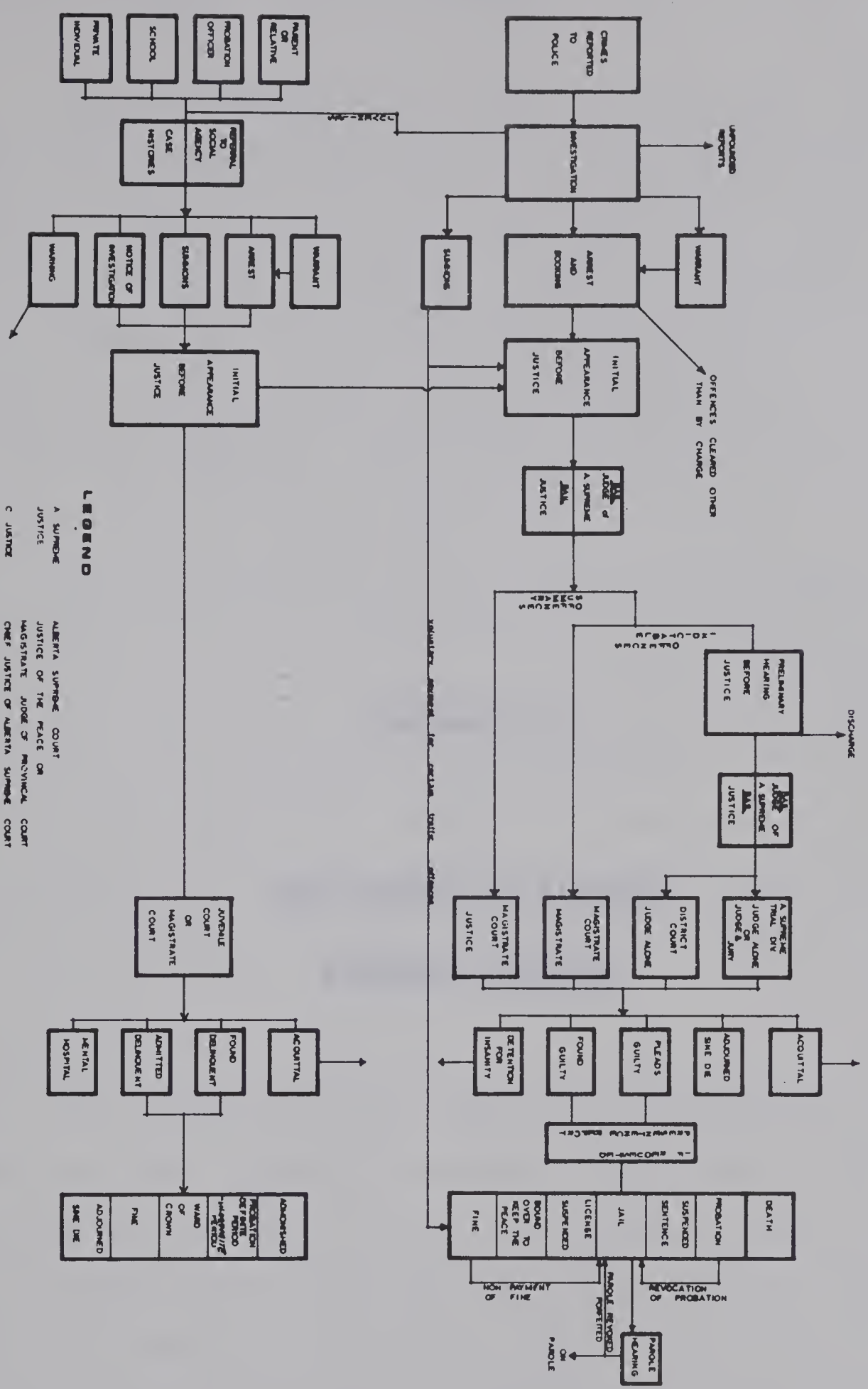




APPENDIX A

FLOW DIAGRAM OF ALBERTA CRIMINAL  
JUSTICE PROCEDURES



[illegible]

LEONARD  
A. SUPREME  
JUSTICE  
C. JUSTICE  
ALBERTA SUPREME COURT  
JUSTICE OF THE PEACE OR  
MAGISTRATE JUDGE OF PEINICAL COURT  
CHIEF JUSTICE OF ALBERTA SUPREME COURT





## APPENDIX B

### THE PROCESS OF ALBERTA

### CRIMINAL JUSTICE



Criminal offences fall into two categories: indictable (those triable by indictment) or summary (those triable by the summary conviction procedure). Other offences may be "indictable or summary," and in these cases the Crown prosecutor has the choice of the procedure. All offences under provincial statutes and municipal by-laws are summary offences. The Canadian Criminal Code and other federal statutes contain both types.

Distinctions may be drawn between three types of indictable offences: those within the magistrate's absolute jurisdiction, those within his consent jurisdiction, and those which are Supreme Court exclusive. For those offences falling in the magistrate's consent jurisdiction the accused is given the option of selecting the mode of trial: by judge alone, by judge and jury, or by magistrate.

#### Adults

The category "crimes reported to the police" is a subset of "all criminal behaviour;" the latter includes undetected as well as unreported offences. Both referrals to the police from members of the general public and crimes detected by the police in the course of their regular operations are included in "crimes reported to the police."

The investigation may continue until the initiation of trial proceedings. If either there is not enough evidence to identify the culprits (so that a summons or warrant may be issued) or the person identified in these documents cannot be located, certain individuals will not be brought into



the criminal justice system. All judicial actions of a criminal nature are initiated by laying an information before a justice (magistrate or justice of the peace).

"An information is a written complaint upon oath by someone (usually a police officer) stating that he has personal knowledge or reasonable cause to believe that a person (whether named or unknown) has committed a criminal offence " (Salhany,1967:75). Once an information has been laid, the justice may consider issuing a summons to appear in court or a warrant for arrest. Although he is obliged to accept an information, he has discretion in whether or not to issue a summons or warrant.

A police officer may directly issue a summons for the accused to appear in court when there has been a violation of the Highway Traffic Act or any municipal bylaw regulating traffic. (Proposed amendments to the Criminal Code will extend this right to other types of offences.) Summons issued in this manner are later sworn before a justice. For certain traffic offences the summons gives the offender the option of voluntary payment.

The process of arrest as outlined in the accompanying diagram includes locating the accused, bringing him to the police station, formally recording the arrest (booking the accused) and advising him of the reason for his detention. (When a private citizen performs an arrest he must deliver the accused forthwith to a police officer.) All arrested





persons must be brought before a justice within twenty-four hours. If within this time period a justice is not available, the accused must make his appearance as soon as is reasonably possible. In situations where the appearance is not immediate, or in which the accused is not released on bail, he will be kept in police detention prior to his initial appearance. The only instance in which the initial appearance will not occur is for traffic offences having the option of voluntary payment. If payment is not received within twenty-one days, the accused must appear before a justice.

At the initial appearance the charge is read and, in all instances in which the magistrate will hear the case, the accused is asked to plead. If the accused requests time to consult legal counsel the session may be adjourned before the plea is taken. Subsequent steps taken at the appearance depend on the offence with which the accused is charged. The following paragraphs set out the alternatives:

(a) Indictable Offences, Magistrate's Absolute Jurisdiction. For a "not guilty" plea the magistrate may either proceed with the trial or set a trial date. Similarly, for a "guilty" plea he can proceed to impose the sentence or can remand the accused for sentencing. At any point prior to the accused starting upon his defence, the magistrate can decide not to try the case, in which event



he can turn the appearance into a preliminary inquiry.

(b) Indictable Offences, Magistrate's Consent Jurisdiction.

At the initial appearance the magistrate asks the accused to elect his mode of trial: by judge alone, by judge and jury or by magistrate. (The election or non-election must be endorsed on the information.) If the election is trial by judge with or without a jury the magistrate will set the date for a preliminary hearing; if the election is trial by magistrate he has the same basic options as above.

(c) Indictable Offences, Supreme Court Exclusive.

In these cases, the magistrate will set the date for a preliminary hearing.

(d) Summary Offences.

If the plea is "guilty" the magistrate may impose his sentence directly. However, he often remands the accused in order that a presentence report may be prepared. For a plea of "not guilty" a date is set for a summary trial. Guilty pleas occur quite frequently for summary offences. (For those offences which can be proceeded against by indictment or by way of summary conviction, the Crown prosecutor states his choice of procedure at the initial appearance.)

If the accused is charged with an indictable offence other than a capital offence, non-capital murder





or an offence under Criminal Code sections 50-53, he may apply for bail to a justice of the peace prior to his initial appearance or to the justice at the time of the initial appearance. For those offences excluded above, the application for bail is made to a judge of the Alberta Supreme Court, Trial Division. The latter is also the source of appeal when a justice refuses to grant bail or when the accused seeks to have the amount of bail varied.

Persons charged with summary offences are seldom in custody pending the disposition of their charges. (Usually they are issued a summons and have their cases disposed of on the first appearance.) However, if the accused is in custody awaiting trial or sentencing he is also eligible to apply to a justice for bail.

At the present time, bail may be set in terms of cash or property, these conditions to be met either by the individual or by others acting on his behalf (sureties). Anticipated changes in bail procedure will make conditional release less dependent on a person's financial position. Bail covers all adjournments until the accused's charge is disposed of. However in those cases where a preliminary hearing is held, there must be a reapplication for bail after committal for trial. If bail is not granted or while the accused is accumulating resources to meet the condition of his bail, detention may be in the municipal jails (for periods of less than five days) or alternatively in



the provincial jails.

A preliminary inquiry precedes a trial by a judge sitting with or without a jury. At the preliminary inquiry the Crown's evidence is heard first. On the basis of the case made, the defence counsel may ask for the accused to be discharged. The justice either dismisses the information or formally commits the accused to stand trial at the next sitting of the court having jurisdiction to try him. The inquiry itself may involve several adjournments and/or a remand for a mental or physical examination.

A request for bail after committal for trial is made to a district court judge or a magistrate when the person is charged with an indictable offence, excluding capital offences, noncapital murder, etc. Again, a judge of the Alberta Supreme Court, Trial Division may hear a request on the offences excluded above. If bail has been refused by a district court judge or magistrate or if there is a request to vary the bail, an appeal may be made to a judge of the Supreme Court.

If a magistrate decides on the basis of a preliminary inquiry to commit the accused for trial, he will be arraigned by a judge of the court which will subsequently try him. Arraignment is the calling of the accused to the bar of the court to plead to the charge made against him. At this point, if the accused is before a Supreme Court judge





he will be offered a jury trial.

In Alberta, a trial on indictment (trial by a judge with or without a jury) is commenced by an "indictment in writing" setting forth the offence with which he is charged. Indictment resembles closely the information first put before a justice. The information was the legal document forming the basis of the first part of the proceedings (including the preliminary hearing); similarly, the indictment is the basis for the judicial action subsequent to a preliminary inquiry.

Trial proceedings by way of indictment or by way of summary conviction involve several common steps.

1. The Crown prosecutor outlines the case he intends to establish and the witnesses he will call. The Crown witnesses are called, cross-examined and re-examined by the Crown.
2. The defence counsel moves that the charges be dismissed upon the basis that the Crown has failed to establish a sufficient case for the trial to proceed. For trial by indictment the motion will be to dismiss the indictment; for summary trial, to dismiss the information.
3. If the decision is not to dismiss the charges, the defence counsel will state his case and call witnesses. Again the witnesses may be cross-examined and re-examined by the defence if necessary.





4. Both the defence and the prosecution have the opportunity of summarizing their cases and addressing the court or the jury (where applicable).

5. The outcomes are conviction, acquittal, unfit to stand trial, detention for insanity or adjournment sine die.

Presentence reports are prepared only at the request of a judge or justice. The reports include the accused's family situation, financial position and his previous record. Requests are often received for indictable offences and certain summary offences such as theft under fifty dollars.

A plea of guilty, whenever entered, precludes any further trial proceedings. The Crown has the option at any time until a verdict is given of reducing the charge to a "lesser included offence." This is often done to obtain a plea of guilty. The most common sentences are those of suspended sentence without probation, suspended sentence with probation, fines and the suspension of a driver's license. All these sentences apply to both indictable and summary offences. Committal to provincial jails are for periods of less than two years and therefore include minor indictable offences and summary offences. Federal penitentiaries take those convicted of longer sentences.

An offence punishable on summary conviction carries with it maximum fines of \$500 and/or maximum of six months



imprisonment. Indictable offences have maximum sentences of life, 14 years, 10 years, 5 years or 2 years.

Parole applications are considered by the National Parole Board after an individual has served one third of his sentence. After relevant reports have been gathered and the prisoner interviewed, a parole hearing is held. Those released on parole may be supervised by agencies within the community or by the provincial Adult Probation Branch. Day paroles are becoming more frequent for young offenders attending school or working. They may be initiated almost immediately on committal to an institution.

Appeals on indictable offences are made to the Appellate Division of the Alberta Supreme Court; on summary offences either to the Appellate Division (on points of law) or to the District Court (for a re-trial). Although further appeals to the Supreme Court of Canada are theoretically possible from the district court, no such appeal has been made in the past ten years. Appeals to the Supreme Court of Canada on indictable offences are more prevalent.

The appeals may be against conviction (or acquittal) or against sentencing and may be pressed by the accused or by the Crown. Appeals from sentencing may be either dismissed, allowed and the sentence varied, or allowed and the sentence suspended. The accused's appeal from conviction may be dismissed or he may be acquitted of the charge, be given a new trial or have his verdict substituted





(for example, replaced by "not guilty by reason of insanity"). A Crown appeal against acquittal may be dismissed, the accused be given a new trial or the accused be convicted of his charge.

A request for bail pending an appeal may be made to the chief justice of the Alberta Supreme Court, Appellate Division or to a judge of that court. Bail may only be granted where the appeal is pending; that is, if leave to appeal is necessary, an application for bail cannot be entertained until this has been granted.

## Juveniles

In Alberta the age of majority has just been altered to eighteen years. Previously males under sixteen and females under eighteen were classified as juveniles. They may enter the criminal justice system as the result of police investigations or through private individuals laying charges. (Other than school attendance complaints, the majority of cases reach the courts through police action.) Other than laying a charge, the police have two options of an official nature: issuing a warning or transferring the individual to a nonadjudicatory social agency. Only in Calgary is the latter alternative used frequently. There juveniles are referred to the city's Social Services Department for a decision on further actions to be taken (including whether or not a charge will be laid).



The processing of juveniles by the court begins with the completion of an "information and complaint form." A juvenile is charged with committing a "delinquency" rather than a specific charge. Between the time the information is laid and the case is heard, a report on the individual is prepared by a social worker. Only in Edmonton does the judge see the case history prior to the initial appearance. Otherwise this form is available to the judge only at the time of sentencing.

A summons may be issued and personally served on a juvenile. However, the courts prefer to mail out a "notice of investigation." Arrested juveniles are held in specially designated detention centres wherever available.

All magistrates in the province have appointments as juvenile court judges. Only the major centres have specially established juvenile courts. An individual over fourteen years of age may be transferred to adult court with the permission of the juvenile court. Recommendations for transfers may be made by the police, crown prosecutor or probation officer. On the basis of such a recommendation a "transfer hearing" is held. (If a magistrate is sitting as a juvenile court judge, another magistrate must hear the "transfer hearing".)

A trial is held whenever a juvenile denies that he has committed a delinquency. The accused may request the judge to retain, on his behalf, the services of a legal



aid lawyer. During the course of court proceedings, the juvenile may be remanded in the care of his parents (with or without the supervision of a social worker) or be placed in a detention centre.

The dispositions open to a judge are basically acquittal, transfer to a mental hospital, adjournment sine die or finding that the juvenile has committed a delinquency. For those admitting or being convicted of a delinquency, the sentencing alternatives are admonishment, release on probation (for a definite or indefinite period of time), fine or committal to the Social Development Department. The latter agency has as alternative placement centres: the Youth Development Centre, a community institution, several group homes, institutions for disturbed children, foster homes, and the juvenile's own home.







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